

Claims

1. An isolated and/or purified polynucleotide comprising one or more of:

5 (a) a polynucleotide encoding a polypeptide comprising SEQ ID NO: 2 or SEQ ID NO: 6;

(b) a polynucleotide comprising a nucleotide sequence of SEQ ID NO: 1 or SEQ ID NO: 5;

10 (c) a polynucleotide, wherein the complement of said polynucleotide hybridizes to the full length coding sequence of (a) or (b) under conditions of moderate stringency;

(d) a polynucleotide comprising the cDNA of deposit NCIMB 41074; and

(e) a complement to the polynucleotide of any one of (a), (b), (c), or (d).

15 2. The polynucleotide of claim 1, wherein said polynucleotide encodes a G-protein coupled receptor (GPCR).

20 3. A vector comprising the polynucleotide of claim 1.

4. A host cell transformed or transfected with the vector of claim 3, wherein said host cell expresses the polynucleotide of claim 1 under conditions sufficient for expression of the polynucleotide.

25 5. A process for producing a polypeptide or fragment thereof comprising culturing the transformed/transfected host cell of claim 5 under conditions sufficient for the expression of said polypeptide or fragment.

30 6. A membrane preparation of a cell of claim 5.

7. An isolated and/or purified polypeptide comprising:

(a) an amino acid sequence encoded by the polynucleotide of claim 1; or

(b) an amino acid sequence as set forth in SEQ ID NO: 2 or SEQ ID NO: 6.

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8. A heterologous polypeptide comprising:
 - (a) an amino acid sequence encoded by the polynucleotide of claim 1; or
 - (b) an amino acid sequence as set forth in SEQ ID NO: 2 or SEQ ID NO: 6.
 - 5 9. An antibody against a polypeptide encoded by the polynucleotide of claim 1.
 - 10 10. A compound which modulates the activity of a polypeptide encoded by the polynucleotide of claim 1.
 11. A pharmaceutical composition comprising the antibody of claim 9 and one or more pharmaceutically acceptable carriers, diluents, adjuvants, or excipients.
 12. A pharmaceutical composition comprising the compound of claim 10 and one or more pharmaceutically acceptable carriers, diluents, adjuvants, or excipients.
 - 15 13. A method for the treatment of a patient in need thereof comprising administering to the patient a therapeutically effective amount of the antibody of claim 9.
 - 20 14. A method for the treatment of a patient in need thereof comprising administering to the patient a therapeutically effective amount of the compound of claim 10.
 15. The method of claim 13 or 14, wherein said patient is in need of treatment for one or more of an allergic disorder, an inflammatory disorder, an immunological disorder, a pulmonary disease, an infectious disease, a neoplastic or myeloproliferative disease, and heart disease.
 - 25 16. The method of claim 15, wherein said allergic disorder is allergic rhinitis or asthma, said pulmonary disease is COPD, or said inflammatory disease is inflammatory bowel disease.
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17. The method of claim 14, wherein said compound is a polypeptide and a therapeutically effective amount of the compound is administered by providing to the patient a polynucleotide sequence encoding said compound, wherein said sequence is expressed *in vivo*.

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18. An animal cell genetically modified to increase expression of the polynucleotide of claim 1, and/or comprising a functionally disrupted endogenous gene encoding a polypeptide of claim 7 or 8.

10 19. A method for identifying a compound of claim 10 comprising contacting the polypeptide of claim 7 or 8 with a candidate compound and determining whether modulation occurs.

20. The method of claim 19 comprising:

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(a) contacting a compound with cells expressing the polypeptide of claim 8 on their surface, said polypeptide being associated with a second component capable of providing a detectable signal in response to the binding of a compound to said polypeptide; said contacting being under conditions sufficient to permit binding of compounds to the polypeptide; and
(b) identifying a compound capable of polypeptide binding by detecting the signal produced by said second component.

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21. The method of claim 19 comprising:

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(a) contacting (i) a detectable first component known to bind to the polypeptide of claim 8 and (ii) a compound, with cells expressing the polypeptide of claim 8 on their cell surface, said polypeptide being associated with a second component capable of providing a detectable signal in response to the binding of a compound to said polypeptide; said contacting being under conditions sufficient to permit binding of compounds to the polypeptide; and

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- (b) determining whether the first component binds to the polypeptide by detecting the absence or otherwise of a signal generated from the interaction of the first component with the polypeptide.
- 5 22. A microorganism as deposited under the accession number NCIMB 41074 at the National Collections of Industrial and Marine Bacteria Ltd.

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